U.S. CHROME
CORPORATION OF NEW YORK

February 29, 2016

Scott Nelson
United States Environmental Protection Agency
Office of Federal Activities
International Compliance Assurance Division
Ariel Rios Building: (2254 A)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: **CY 2015 Annual Hazardous Waste Export Report**

Dear Mr. Nelson:

Please find attached U. S. Chrome Corporation of New York's (USC) CY 2015 annual Hazardous Waste Export Report. The completion of this document was based upon Hazardous Waste Manifests and shipment volumes provided by Stablex of Canada. A copy of the latest Hazardous Waste Reduction Plan (revised June 2015 is attached, as required.

If you have any questions concerning the information presented, please contact me directly.

Very truly your,
U.S. Chrome Corporation of New York

Michael Klotzbach (KH)

Michael Klotzbach
General Manager

Attachment

received
SDN Mar 4/2016

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31 SWAN STREET • BATAVIA, NEW YORK 14020 • (585) 343-7077 • FAX (585) 344-4016
STRATFORD, CT • DAYTON, OH • FOND DU LAC, WI • GENOA, IL • LONG BEACH, CA • NORRISTOWN, PA

CY 2015 Export Report Attachment 1

Hazardous Waste Export Reports

ANNUAL HAZARDOUS WASTE EXPORT REPORT
CALENDER YEAR 2015

1. PRIMARY EXPORTER (Consignor)

Name:	U.S. Chrome Corporation of New York
USEPA ID#:	NYD990774206
Mailing Address:	31 Swan Street Batavia, New York 14020
Site Address:	31 Swan Street Batavia, New York 14020

2. EXPORT INTERMEDIARY

Name:	Gulfstream TLC, Inc.
USEPA ID#:	NYR000156539
Mailing Address:	1080 Military Turnpike Unit 410 Plattsburg, New York 12901

3. CONSIGNEE

Name:	Stablex Canada, Inc.
USEPA ID#:	NYD980756415
Mailing Address:	760 Boul. Industriel Blainsville, Quebec J7C 3V4

4. TRANSPORTER #1

Name:	Transport Rollex Ltee
USEPA ID#:	NYF006000053

5. WASTE INFORMATION

Description:	Waste Water Treatment Filter Cake
EPA Waste #:	F006
DOT Shipping Name:	RQ Waste Environmentally Hazardous Substances, Solids nos
DOT Hazard Class:	8
DOT ID Code:	UN3077

6. SHIPPING INFORMATION

Total Shipments:	1
Shipment Dates:	7/21/15
Total Volume Shipped:	0.75 tons

7. WASTE MINIMIZATION

Report attached.

8. CERTIFICATION

I certify under the penalty of the law that I have personally examined and am familiar with the information submitted in this report, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Signed: _____ Date: 02/29/2016

ANNUAL HAZARDOUS WASTE EXPORT REPORT
CALENDER YEAR 2015

1. PRIMARY EXPORTER (Consignor)

Name:	U.S. Chrome Corporation of New York
USEPA ID#:	NYD990774206
Mailing Address:	31 Swan Street Batavia, New York 14020
Site Address:	31 Swan Street

2. EXPORT INTERMEDIARY

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Mailing Address:	1080 Military Turnpike Unit 410 Plattsburg, New York 12901 Batavia, New York 14020

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Name:	Stablex Canada, Inc.
USEPA ID#:	NYD980756415
Mailing Address:	760 Boul. Industriel Blainsville, Quebec J7C 3V4

4. TRANSPORTER #1

Name:	Transport Rollex Ltee
USEPA ID#:	NYF006000053

5. WASTE INFORMATION

Description:	Chrome Contaminated Debris
EPA Waste #:	D007, D008
DOT Shipping Name:	RQ Waste Environmentally Hazardous Substance Solid nos
DOT Hazard Class:	9
DOT ID Code:	UN3077

6. SHIPPING INFORMATION

Total Shipments:	3
Shipment Dates:	4/8/15, 7/21/15 & 11/13/15
Total Volume Shipped:	5.1 tons

7. WASTE MINIMIZATION — Report attached.

8. CERTIFICATION

I certify under the penalty of the law that I have personally examined and am familiar with the information submitted in this report, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Signed: _____ Date: 02/29/2016

ANNUAL HAZARDOUS WASTE EXPORT REPORT
CALENDER YEAR 2015

1. PRIMARY EXPORTER (Consignor)

Name:	U.S. Chrome Corporation of New York
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Mailing Address:	31 Swan Street Batavia, New York 14020
Site Address:	31 Swan Street Batavia, New York 14020

2. EXPORT INTERMEDIARY

Name:	Gulfstream TLC, Inc.
USEPA ID#:	NYR000156539
Mailing Address:	1080 Military Turnpike Unit 410 Plattsburg, New York 12901

3. CONSIGNEE

Name:	Stablex Canada, Inc.
USEPA ID#:	NYD980756415
Mailing Address:	760 Boul. Industriel Blainsville, Quebec J7C 3V4

4. TRANSPORTER #1

Name:	Transport Rollex Ltee
USEPA ID#:	NYF006000053

5. WASTE INFORMATION

Description:	Waste Chromic Acid Solution
EPA Waste #:	D002, D007
DOT Shipping Name:	RQ Waste Chromic Acid Solution
DOT Hazard Class:	8
DOT ID Code:	UN1755

6. SHIPPING INFORMATION

Total Shipments:	3
Shipment Dates:	4/8/15, 7/21/15 & 11/12/15
Total Volume Shipped:	2.1 tons

7. WASTE MINIMIZATION

Report attached.

8. CERTIFICATION

I certify under the penalty of the law that I have personally examined and am familiar with the information submitted in this report, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Signed: _____ Date: 02/29/2016

ANNUAL HAZARDOUS WASTE EXPORT REPORT
CALENDER YEAR 2015

1. PRIMARY EXPORTER (Consignor)

Name:	U.S. Chrome Corporation of New York
USEPA ID#:	NYD990774206
Mailing Address:	31 Swan Street Batavia, New York 14020
Site Address:	31 Swan Street Batavia, New York 14020

2. EXPORT INTERMEDIARY

Name:	Gulfstream TLC, Inc.
USEPA ID#:	NYR000156539
Mailing Address:	1080 Military Turnpike Unit 410 Plattsburg, New York 12901

3. CONSIGNEE

Name:	Stablex Canada, Inc.
USEPA ID#:	NYD980756415
Mailing Address:	760 Boul. Industriel Blainsville, Quebec J7C 3V4

4. TRANSPORTER #1

Name:	Transport Rollex Ltee
USEPA ID#:	NYF006000053

5. WASTE INFORMATION

Description:	Spent Chromic Acid Tank Bottom Sludge
USEPA Waste #:	D002, D007
USDOT Shipping Name:	RQ Waste Corrosive Solid, Acidic, Inorganic nos
USDOT Hazard Class:	8
USDOT ID Code:	UN3260

6. SHIPPING INFORMATION

Total Shipments:	1
Shipment Dates:	11/12/15
Total Volume Shipped:	0.35 tons

7. WASTE MINIMIZATION

Report attached.

8. CERTIFICATION

I certify under the penalty of the law that I have personally examined and am familiar with the information submitted in this report, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Signed: _____ Date: 02/29/2016

CY 2015 Export Report Attachment 2

Current Hazardous Waste Reduction Plan

HAZARDOUS WASTE REDUCTION PLAN
2014 Biennial Update

Prepared For:
U.S. Chrome Corporation of New York
31 Swan Street
Batavia, New York

Prepared By:
Hazard Evaluations, Inc.
3752 North Buffalo Road
Orchard Park, New York 14127

June 30, 2015

1.0 INTRODUCTION

1.1 Background

The U.S. Chrome Corporation of New York (USC) facility, located at 31 Swan Street, Batavia, New York, specializes in Hard Chrome electroplating of metal parts. The operations performed on-site to produce the facility's end products include very limited machining of metal parts, alkaline cleaning, non-cyanide Chromium electroplating and rinsing. Hazardous waste generation is related primarily to the cleaning and processing of metal parts and the treatment of the resulting wastewaters. The alkaline cleaning involves use of a caustic solution, while the electroplating bath consists of a solution containing Hexavalent Chromium. In 2014, there were six different hazardous waste streams generated by the facility, including: 1) Hazardous wastewater treatment plant filter cake; 2) Chromium contaminated debris; 3) Waste Chromic Acid solution; 4) Alkaline Stripping Solution; 5) Chromic Acid Tank Sludge; and 6) Electroplating process wastewater. The electroplating process wastewater is treated on-site for metals precipitation and clarification prior to being discharged to the local POTW. All other wastes are shipped off-site for treatment, stabilization and landfill disposal.

1.2 Corporate Hazardous Waste Reduction Policy

It is the policy of USC to operate its facility both with the highest regard for the protection of human health and the environment, and in accordance with applicable federal, state and local environmental laws and regulations. Furthermore, it is USC's long term goal to: 1) Reduce the overall quantity of hazardous waste(s) generated; and/or 2) Recover, reuse or recycle any hazardous wastes generated when possible. To that end, USC has already initiated various waste reduction efforts over the past several years.

USC's management has authorized its General Manager to implement those waste reduction measures which have been deemed technically feasible and economically practical. This individual is also responsible for implementing both the hazardous waste reduction policy and the provisions of the Hazardous Waste Reduction Plan (HWRP).

USC's primary goal is to maintain its existing waste reduction efforts in a manner which maximizes efficiency and effectiveness. The use of "Porous Pots" in the plating baths has helped reduce waste Chromic Acid solution by removing impurities and extending the life of this process solution. USC will also continue to monitor industry research regarding more efficient methods of managing or recovering the alkaline stripping solution and minimizing the amount of wastewater from the electroplating process. To enhance these efforts, USC plans to provide employee training focusing on the implementation, benefits and applicability of waste reduction measures. Achieving this goal will reduce both disposal costs and the regulatory requirements for hazardous wastes generated throughout the facility.

2.0 HAZARDOUS WASTE GENERATION

2.1 General

During calendar year 2014, USC generated a total of 27.6 tons of RCRA hazardous wastes that were shipped off-site. These wastes included the following:

1) 12.6 tons of Chromium Contaminated Debris (D007, D008);
2) 6.3 tons of Waste Chromic Acid Solution (D002, D007);
3) 2.2 tons of Alkaline Stripping Solution (D002, D007);
4) 3.0 tons of Hazardous Waste Treatment Plant Filter Cake (F006);
5) 3.5 tons of Chromic Acid Tank Sludge (D002, D007)

In addition, a total of 375 tons of hazardous process wastewater were treated on-site before being discharged to the local POTW. There were no acute hazardous wastes generated by USC during 2014.

2.2 Hazardous Waste Streams

As indicated above, nearly all of the reportable hazardous wastes generated by USC result directly from the facility's cleaning and processing of metal parts. The primary cleaning operation involves submersing (stripping) the parts in an alkaline solution (Tetra Potassium Pyrophosphate - TKPP) and then rinsing the parts with fresh water. Over time, the alkaline solution may become spent and have to be disposed. This disposal process typically occurs about once every two years. The parts are then charged and placed in an electroplating bath containing Chromic acid. Wastes generated from this process may include waste Chromic acid solution and Chromic acid tank sludge that are removed from the electroplating bath tanks. The plated parts are then rinsed, and the rinse water is treated in the on-site wastewater treatment system via metal precipitation and clarification. The water treatment system includes a filter press which results in production of a filter cake waste. The final waste stream consists of debris produced during processing, including gloves, tape, floor sweepings and other ancillary materials.

Of the various hazardous wastes generated by USC during 2014, three of the six waste streams will be addressed in this HWRP update including Chrome contaminated debris, waste chromic acid solution and process wastewater. These wastes were all generated in amounts greater than five tons and together accounted for more than 90% of the total hazardous waste generated in 2014. The remaining hazardous wastes (alkaline stripping solution, chromic acid tank sludge and wastewater treatment plant filter cake) were generated at a rate below the five ton reporting threshold, and are not further addressed in this HWRP.

2.3 Production Rate Index

A Production Rate Index (PRI) has been developed for this facility to measure, and account for, changes in the annual amount of parts processed. These data will be used to facilitate the assessment of hazardous waste reduction efforts by allowing USC's management to distinguish inter-year quantity changes that resulted from waste reduction activity from those caused by economic and/or other factors. The PRI for Calendar Year 2014 was calculated based on past production information provided by USC personnel, as follows:

2014 Production = $2,026,290
2013 Production = $2,335,708
Production Rate Index = $2,026,290 / $2,335,708 = 0.87

2.4 Hazardous Waste Management Costs

To date, the costs of managing USC's hazardous wastes have resulted from the following activities (based on USC estimates):

Labor and Materials for Waste Management (Annual)	
Labor (i.e., operators, technicians):	$ 45,567
Other/Miscellaneous Expenses:	2,885
Transportation & Disposal of Wastes (Annual):	19,059
Total	**$ 67,511**

3.0 HAZARDOUS WASTE STREAM REDUCTION MEASURES

3.1 General

As indicated in the previous sections, USC's hard chrome plating operations may result in the generation of several different types of hazardous waste. USC has already committed resources to determining and evaluating various measures for reducing the facility's overall hazardous waste generation rate and volume. The waste reduction measures which are currently utilized (and/or scheduled for implementation) at this facility include research regarding more efficient methods of managing or recovering the alkaline stripping solution, minimizing debris associated with the plating process, and minimizing the amount of wastewater from the electroplating process. Additionally, enhanced employee training will be pursued to improve waste management. These measures are discussed below.

3.2 Waste Reduction Measures

To minimize the quantity of hazardous wastes produced, USC has already implemented various production-related activities. These include limited use of Porous Pots in the Chromic acid baths to prolong process solution life and reduce tank sludges and continued use of the treatment system sludge dryer to reduce sludge weight. In addition, the implementation of new methods of masking parts to be plated has continually reduced the generation rate for this waste over time. USC is also committed to reviewing industry journals and trade publications for improved methods of using the alkaline cleaning solution. Reduced waste production may result from lengthening the useful life of the solution by filtration, by-product removal, etc., although no solution has been identified to date. The investigation into reducing the amount of wastewater produced from rinsing plated parts concluded with the selection of a lower flow rinsing nozzle, with the recirculation of rinse waters being allowed for some select operations.

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Another waste reduction technique which is continually being used by USC is employee training. Currently, all personnel, regardless of their possible exposure to hazardous materials and/or hazardous wastes, receive OSHA Hazard Communications Standard training. RCRA Hazardous Waste training is also provided to a select group of employees that are involved with hazardous waste management or generation. These training programs are provided annually and cover a variety of topics including, but not limited to, compliance with applicable federal and state regulations; solid and hazardous waste identification definitions; sources of hazard information; the "cradle to grave" waste tracking system and employee responsibilities regarding waste identification and characterization. USC will continue to revise and expand these training programs to include additional information focusing on hazardous waste reduction. Among the new topics proposed are applicable waste reduction regulations, corporate waste reduction policy, benefits and incentives for hazardous waste reduction, and implementation of waste reduction techniques. Continued improvements in facility housekeeping, minor changes in operating practices and the installation/use of additional control equipment (e.g. splash guards on plating tanks) remain planned for 2015. These measures are designed to provide a cleaner, safer work environment at the USC facility and should ultimately lead to a reduction in the amount of chromium-contaminated debris and other wastes generated.

4.0 IMPACT OF WASTE REDUCTION IMPLEMENTATION

4.1 Schedule

The proposed schedule of implementation for the proposed waste reduction measures identified in Section 3.2 is summarized in Table 2.

4.2 Future Waste Transference Estimate

The implementation of the proposed waste reduction techniques identified in Section 3.2 will not result in the transference of waste to any other environmental media. The continued training program will provide employees with valuable information on the benefits of waste reduction and include basic techniques for reducing wastes at the USC facility. This program should help to promote the concept of waste reduction throughout the facility.

4.3 Economic Practicality

When adjusted for the production rate decrease between 2013 and 2014 (13 percent), the actual cost savings have increased due to increased labor costs and other miscellaneous expenses. In 2014, USC estimated the total cost of managing and disposing hazardous waste to be $67,511. Future waste management costs will be estimated with more production and waste generation data. Implementation of USC's waste reduction measures will continue to be evaluated relative to hazardous waste generation volume, management cost, and production. Estimation of cost savings will be reported in future Hazardous Waste Reduction Plans.

4.4 Waste Reduction Assessments

The measurement of waste reduction effectiveness was completed for each reportable hazardous waste stream generated by USC during 2014. The waste reduction measurement was completed using a method developed and identified in USC's CY 1996 Hazardous Waste Reduction Plan, with the exception of the calculation of the Actual Hazardous Waste Reduction Rate presented below as Step 5. This calculation has been modified to reflect an example obtained from the NYSDEC during 2000.

Chrome Contaminated Debris

Step 1 Percentage change (C) in the waste stream's generation volume from one year to the next (Note: A negative number represents a reduction in the generation volume):

Comparing 2014 to 2013 (Prior Year)

$$C = \frac{\text{(Waste current year [2014]) - (Waste prior year [2013])}}{\text{(Waste prior year [2013])}} \times 100$$

$$C = \frac{(12.6 - 8.1)}{(8.1)} = 0.55 \times 100$$

C = **55%** Volume **increase** from 2013 (Prior Year) to 2014

Comparing 2014 to 2003 (Base Year)

$$C = \frac{\text{(Waste current year [2014]) - (Waste base year [2003])}}{\text{(Waste base year [2003])}} \times 100$$

$$C = \frac{(12.6 - 3.47)}{(3.47)} = 2.63 \times 100$$

C = **263%** Volume **increase** from 2003 (Base Year) to 2014

Step 2 Production Rate Index (PRI) (Note: A number less than 1.0 will represent a reduction in the facility's production):

Comparing 2014 to 2013 (Prior Year)

$$PRI = \frac{\text{(Production current year [2014])}}{\text{(Production prior year [2013])}}$$

$$PRI = \frac{(\$2,026,290)}{(\$2,335,708)}$$

PRI = **0.87**

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Comparing 2014 to 2003 (Base Year)

PRI = (Production current year [2014])
(Production base year [2003])

PRI = ($2,026,290)
($1,266,404)

PRI = **1.60**

Step 3 Expected amount of hazardous waste generated (EHW) in 2014 relative to production in previous year (2012) and base year (2003):

Comparing 2014 to 2013 (Previous Year)

EHW = 2014/2013 PRI x Hazardous waste generated during 2013:

EHW = 0.87 x 8.1 tons

EHW = **7.05 tons** (expected in 2014)

Comparing 2013 to 2003 (Base Year)

EHW = 2014/2003 PRI x hazardous waste generated during 2003:

EHW = 1.60 x 3.47 tons

EHW = **5.55 tons** (expected in 2014)

Step 4 Hazardous Waste Reduction (HWR) for CY 2013 represents the theoretical volume of increase or decrease of the current year's actual generated waste volume relative to the volume of hazardous waste "expected" to be generated when accounting for production differences between the previous/current year and base/current year [Note: A negative number indicates an increase in volume of hazardous waste generated (adjusted for production)]:

Comparing 2014 to 2013 (Previous Year)

HWR = 2014/2013 EHW - Actual hazardous waste generated during 2014.

HWR = 7.05 tons – 12.6 tons

HWR = -**5.55 tons** adjusted hazardous waste **increase** from 2013 to 2014.

Comparing 2014 to 2003 (Base Year)

HWR = 2014/2003 EHW - Actual hazardous waste generated during 2014.

HWR = 5.55 tons – 12.6 tons

HWR = **-7.05 tons** adjusted hazardous waste **increase** from 2003 to 2014.

Step 5 Estimate of the actual hazardous waste reduction rate (RR) achieved is a representation of the percentage difference between the Expected Hazardous Waste volume (relative to production) and the theoretical Hazardous Waste Reduction (or increase) volume [Notes: A negative number indicates an increase of hazardous waste generated for the current year, expressed as a percentage of the Expected Hazardous Waste (which is adjusted for production)]:

Using 2014/2013 (Previous Year) HWR & EHW

$$RR = \frac{\text{2014/2013 HWR}}{\text{2014/2013 EHW}} \times 100$$

$$RR = \frac{-5.55 \text{ tons}}{7.05 \text{ tons}} = 0.78 \times 100$$

RR = **78% increase** from 2013 to 2014

Using 2014/2003 (Base Year) HWR & EHW

$$RR = \frac{\text{2014/2003 HWR}}{\text{2014/2003 EHW}} \times 100$$

$$RR = \frac{-7.05 \text{ tons}}{5.55 \text{ tons}} = -1.27 \times 100$$

RR = **127% increase** from 2003 to 2014

Waste Chromic Acid Solution

Step 1 Percentage change (C) in the waste stream's generation volume from one year to the next (Note: A negative number represents a reduction in the generation volume):

Comparing 2014 to 2013

$$C = \frac{\text{(Unit waste current year [2014]) - (Unit waste prior year [2013])}}{\text{(Unit waste prior year [2013])}} \times 100$$

$$C = \frac{(6.3 - 6.9)}{(6.9)} = -0.09 \times 100$$

C = **9%** Volume **decrease** from 2013 to 2014

Comparing 2014 to 1996 (Base Year)

$$C = \frac{\text{(Waste current year [2014]) - (Waste base year [1996])}}{\text{(Waste base year [1996])}} \times 100$$

$$C = \frac{(6.3 - 5.66)}{(5.66)} = 0.11 \times 100$$

C = **11%** Volume **increase** from 1996 (Base Year) to 2014

Step 2 Production Rate Index (PRI) (Note: A number less than 1.0 will represent a reduction in the facility's production):

Comparing 2014 to 2013 (Prior Year)

$$PRI = \frac{\text{(Production current year [2014])}}{\text{(Production prior year [2013])}}$$

$$PRI = \frac{(\$2,026,290)}{(\$2,335,708)}$$

PRI = **0.87**

Comparing 2014 to 2003 (Base Year)

$$PRI = \frac{\text{(Production current year [2014])}}{\text{(Production base year [2003])}}$$

$$PRI = \frac{(\$2,026,290)}{(\$1,266,404)}$$

PRI = **1.60**

Step 3 Expected amount of hazardous waste generated (EHW) in 2014 relative to production in previous year (2013) and base year (1996):

Comparing 2014 to 2013 (Previous Year)

EHW = 2014/2013 PRI x Hazardous waste generated during 2013:

EHW = 0.87 x 6.9 tons

EHW = **6.0 tons** (expected in 2014)

Comparing 2014 to 1996 (Base Year)

EHW = 2014/1996 PRI x hazardous waste generated during 1996:

EHW = 1.6 x 5.66 tons

EHW = **9.06 tons** (expected in 2014)

Step 4 Hazardous Waste Reduction (HWR) for CY 2014 represents the theoretical volume of increase or decrease of the current year's actual generated waste volume relative to the volume of hazardous waste "expected" to be generated when accounting for production differences between the previous/current year and base/current year [Note: A negative number indicates an increase in volume of hazardous waste generated (adjusted for production)]:

Comparing 2014 to 2013 (Previous Year)
HWR = 2014/2013 EHW - Actual hazardous waste generated during 2014.

HWR = 6.0 tons – 6.3 tons

HWR = **-0.3 tons** adjusted hazardous waste **increase** from 2013 to 2014.

Comparing 2014 to 1996 (Base Year)
HWR = 2014/1996 EHW - Actual hazardous waste generated during 2014.

HWR = 9.06 tons – 6.3 tons

HWR = **2.76 tons** adjusted hazardous waste **decrease** from 1996 to 2014.

Step 5 Estimate of the actual hazardous waste reduction rate (RR) achieved is a representation of the percentage difference between the Expected Hazardous Waste volume (relative to production) and the theoretical Hazardous Waste Reduction (or increase) volume [Note: A negative number indicates an increase of hazardous waste generated for the current year, expressed as a percentage of the Expected Hazardous Waste (which is adjusted for production)]:

Using 2014/2013 (Previous Year) HWR & EHW

$$RR = \frac{\text{2014/2013 HWR}}{\text{2014/2013 EHW}} \times 100$$

$$RR = \frac{\text{-0.3 tons}}{\text{6.0 tons}} = -0.05 \times 100$$

RR = **5% increase** from 2013 to 2014

Using 2014/1996 (Base Year) HWR & EHW

RR = 2014/1996 HWR x 100
2014/1996 EHW

RR = 2.76 tons = 0.30 X 100
9.06 tons

RR = **30% decrease** from 1996 to 2014

Process Wastewater

Step 1 Percentage change (C) in the waste stream's generation volume from one year to the next (Note: A negative number represents a reduction in the generation volume):

Comparing 2014 to 2013

C = (Unit waste current year [2014]) - (Unit waste prior year [2013]) x 100
(Unit waste prior year [2013])

C = (375 – 432) = -0.13 x 100
(432)

C = **13.0%** Volume **decrease** from 2013 to 2014

Comparing 2014 to 1995 (Base Year)

C = (Waste current year [2014]) - (Waste base year [1995]) x 100
(Waste base year [1995])

C = (375 - 228) = 0.65 x 100
(228)

C = **65%** Volume **increase** from 1995 (Base Year) to 2014

Step 2 Production Rate Index (PRI) (Note: A number less than 1.0 will represent a reduction in the facility's production):

Comparing 2014 to 2013 (Prior Year)

PRI = (Production current year [2014])
(Production prior year [2013])

PRI = ($2,026,290)
($2,335,708)

PRI = **0.87**

Comparing 2014 to 2003 (Base Year)
PRI = (Production current year [2014])
(Production base year [2003])

PRI = ($2,026,290)
($1,266,404)

PRI = **1.60**

Step 3 Expected amount of hazardous waste generated (EHW) in 2013 relative to production in previous year (2012) and base year (1995):

Comparing 2014 to 2013 (Previous Year)
EHW = 2014/2013 PRI x Hazardous waste generated during 2013:

EHW = 0.87 x 432 tons

EHW = **376.0 tons** (expected in 2013)

Comparing 2013 to 1995 (Base Year)
EHW = 2014/1995 PRI x hazardous waste generated during 1995:

EHW = 1.60 x 228 tons

EHW = **364.8 tons** (expected in 2014)

Step 4 Hazardous Waste Reduction (HWR) for CY 2013 represents the theoretical volume of increase or decrease of the current year's actual generated waste volume relative to the volume of hazardous waste "expected" to be generated when accounting for production differences between the previous/current year and base/current year [Note: A negative number indicates an increase in volume of hazardous waste generated (adjusted for production)]:

Comparing 2014 to 2013 (Previous Year)
HWR = 2014/2013 EHW - Actual hazardous waste generated during 2014.

HWR = 376 tons – 375 tons

HWR = **1 ton** adjusted hazardous waste **decrease** from 2013 to 2014.

Comparing 2014 to 1995 (Base Year)
HWR = 2014/1995 EHW - Actual hazardous waste generated during 2014.

HWR = 365 tons – 375 tons

HWR = **10 tons** adjusted hazardous waste **increase** from 1995 to 2014.

Step 5 Estimate of the actual hazardous waste reduction rate (RR) achieved is a representation of the percentage difference between the Expected Hazardous Waste volume (relative to production) and the theoretical Hazardous Waste Reduction (or increase) volume [Note: A negative number indicates an increase of hazardous waste generated for the current year, expressed as a percentage of the Expected Hazardous Waste (which is adjusted for production)]:

Using 2014/2013 (Previous Year) HWR & EHW

$$RR = \frac{\text{2014/2013 HWR}}{\text{2014/2013 EHW}} \times 100$$

$$RR = \frac{1 \text{ ton}}{376 \text{ tons}} = 0.003 \times 100$$

RR = **0.3% decrease** from 2013 to 2014

Using 2014/1995 (Base Year) HWR & EHW

$$RR = \frac{\text{2014/1995 HWR}}{\text{2014/1995 EHW}} \times 100$$

$$RR = \frac{-10 \text{ tons}}{365 \text{ tons}} = 0.03 \times 100$$

RR = **3% increase** from 1995 to 2014

HAZARDOUS WASTE GENERATION SUMMARY

COMPANY NAME	EPA I.D. NUMBER
US Chrome Corporation of New York	NYD990774200

TABLE 1

WASTE STREAM ID NUMBER	NAME OF WASTE	SOURCE OF GENERATION	DISPOSAL METHOD	QUANTITY OF WASTE GENERATED (TONS) 1995	1996	1997	1998	PRODUCTIVITY INDEX BASE INDEX = 1 (YEAR HWRP FIRST SUBMITTED) 1995	1996	1997	1998
001	Chromic Acid	Plating solution	Treat/Recycle		6.44	1.19	9.87		0.33	3.0	0.2
	Solution (D)	with impurities									
002	Chromic Acid	Sediment on	Stabilization		2.63	2.33	6.60		0.30	0.94	0.33
	Tank Sludge (E)	bottom of tank	& Secure Landfill								
003	Waste Treatment	WW Metals removal	Stabilization	8.1	2.1	2.37	3.34	0.55	1.28	0.664	0.652
	Filter Cake (A)		& Secure Landfill								
004	waste Water (B)	Plating & Rinsing	On-Site Treatment	228	266.5	263.8	260.54	0.62	1.28	0.664	0.652
005	Stripping Solution	Spent Alkaline	Treatment &		5.66	3.65	8.73		0.09	1.496	0.4
		Strip Solution	Secure Landfill								

THIS FORM DEVELOPED BY: THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS, BUREAU OF WASTE REDUCTION & RECYCLING

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HAZARDOUS WASTE GENERATION SUMMARY

COMPANY NAME	EPA I.D. NUMBER
U.S. Chrome Corporation of New York	NYD990774200

TABLE 1 (continuation #1)

WASTE STREAM ID NUMBER	NAME OF WASTE	SOURCE OF GENERATION	DISPOSAL METHOD	QUANTITY OF WASTE GENERATED (TONS)				PRODUCTIVITY INDEX BASE INDEX = 1 (YEAR HWRP FIRST SUBMITTED)			
				1999	2000	2001	2002	1999	2000	2001	2002
001	Chromic Acid	Plating Solution	treat/Recycle	3.80	6.25	0.00	0.00	1.5	1.2	1.3	0.97
	Solution (D)	with impurities									
002	Chromic Acid	Sediment on	Stabilization	0.44	3.90	0.30	1.6	0.11	0.9	0.80	0.97
	Tank Sludge (E)	Bottom of Tank	& Secure Landfill								
003	Waste Treatment	WW Metals removal	Stabilizaion	4.02	3.21	3.13	1.51	0.640	0.631	0.623	0.97
	Filter Cake (A)		& Secure Landfill								
004	Waste Water (B)	Plating & Rinsing	On site Treatment	264.68	258.21	253.98	1017.0	0.642	0.631	0.623	0.97
005	Stripping Solution	Spent Alkaline	Treatment &	8.15	3.48	5.44	6.05	0.45	0.40	0.42	0.97
		Strip Solution	Secure Landfill								

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HAZARDOUS WASTE GENERATION SUMMARY

COMPANY NAME	EPA I.D. NUMBER
US Chrome Corporation of New York	NYD990774200

TABLE 1

WASTE STREAM ID NUMBER	NAME OF WASTE	SOURCE OF GENERATION	DISPOSAL METHOD	QUANTITY OF WASTE GENERATED (TONS) 2003	2004	2005	2006	PRODUCTIVITY INDEX BASE INDEX = 1 (YEAR HWRP FIRST SUBMITTED) 2003	2004	2005	2006
001	Chromic Acid	Plating solution	Treat/Recycle	8.89	3.79	2.24	3.05	0.99	1.47	0.96	1.13
	Solution (D)	with impurities									
002	Chromic Acid	Sediment on	Stabilization	1.66	2.15	2.80	1.40	0.99	1.47	0.96	1.13
	Tank Sludge (E)	bottom of tank	& Secure Landfill								
003	Waste Treatment	WW Metals removal	Stabilization	5.94	9.55	9.33	3.75	0.99	1.47	0.96	1.13
	Filter Cake (A)		& Secure Landfill								
004	waste Water (B)	Plating & Rinsing	On-Site Treatment	722.0	980.0	571.0	421.17	0.99	1.47	0.96	1.13
005	Stripping Solution	Spent Alkaline	Treatment &	2.13	2.84	6.40	6.88	0.99	1.47	0.96	1.13
		Strip Solution	Secure Landfill								
006	Chrome Debris	Tape,gloves, etc.	Stabilizartion	3.47	5.80	15.0	11.4	0.99	1.47	0.96	1.13
			& Secure Landfill								

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HAZARDOUS WASTE GENERATION SUMMARY

COMPANY NAME	EPA I.D. NUMBER
U.S. Chrome Corporation of New York	NYD990774200

TABLE 1 (continuation #1)

WASTE STREAM ID NUMBER	NAME OF WASTE	SOURCE OF GENERATION	DISPOSAL METHOD	QUANTITY OF WASTE GENERATED (TONS)				PRODUCTIVITY INDEX BASE INDEX = 1 (YEAR HWRP FIRST SUBMITTED)			
				2007	2008	2009	2010	2007	2008	2009	2010
001	Chromic Acid	Plating Solution	Treat/Recycle	5.95	8.75	10.85	3.0	1.0	1.32	0.77	0.94
	Solution (D)	with impurities									
002	Chromic Acid	Sediment on	Stabilization	3.85	0.7	0.7	0.35	1.0	1.32	0.77	0.94
	Tank Sludge (E)	Bottom of Tank	& Secure Landfill								
003	Waste Treatment	WW Metals removal	Stabilizaion	2.25	3.75	0.75	0.75	1.0	1.32	0.77	0.94
	Filter Cake (A)		& Secure Landfill								
004	Waste Water (B)	Plating & Rinsing	On site Treatment	417	462.3	500.4	362.8	1.0	1.32	0.77	0.94
005	Stripping Solution	Spent Alkaline	Treatment &	2.75	8.25	0	6.05	1.0	1.32	0.77	0.94
		Strip Solution	Secure Landfill								
006	Chrome Debris	Tape,gloves,etc.	Stabilization	4.8	7.2	8.5	4.5	1.0	1.32	0.77	0.94
			& Secure Landfill								

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HAZARDOUS WASTE GENERATION SUMMARY

COMPANY NAME	EPA I.D. NUMBER
US Chrome Corporation of New York	NYD990774200

TABLE 1

WASTE STREAM ID NUMBER	NAME OF WASTE	SOURCE OF GENERATION	DISPOSAL METHOD	QUANTITY OF WASTE GENERATED (TONS) 2011	2012	2013	2014	PRODUCTIVITY INDEX BASE INDEX = 1 (YEAR HWRP FIRST SUBMITTED) 2011	2012	2013	2014
001	Chromic Acid	Plating solution	Treat/Recycle	9.4	3.6	6.9	6.3	1.46	1.05	0.78	0.87
	Solution (D)	with impurities									
002	Chromic Acid	Sediment on	Stabilization	1.5	0	4.2	3.5	1.46	1.05	0.78	0.87
	Tank Sludge (E)	bottom of tank	& Secure Landfill								
003	Waste Treatment	WW Metals removal	Stabilization	1.5	2.1	3.6	3.0	1.46	1.05	0.78	0.87
	Filter Cake (A)		& Secure Landfill								
004	Waste Water (B)	Plating & Rinsing	On-Site Treatment	417	450	432	375	1.46	1.05	0.78	0.87
005	Stripping Solution	Spent Alkaline	Treatment &	4.4	6.1	0.8	2.2	1.46	1.05	0.78	0.87
		Strip Solution	Secure Landfill								
006	Chrome Debris	Tape, gloves, etc.	Stabilization	8.6	10.8	8.1	12.6	1.46	1.05	0.78	0.87
			& Secure Landfill								

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HAZARDOUS WASTE GENERATION SUMMARY

COMPANY NAME	EPA I.D. NUMBER
U.S. Chrome Corporation of New York	NYD990774200

TABLE 1 (continuation #1)

WASTE STREAM ID NUMBER	NAME OF WASTE	SOURCE OF GENERATION	DISPOSAL METHOD	QUANTITY OF WASTE GENERATED (TONS)				PRODUCTIVITY INDEX BASE INDEX = 1 (YEAR HWRP FIRST SUBMITTED)			
				2011	2012	2013	2014	2011	2012	2013	2014
007	Waste De-burring	Finishing	Treatment & Secure Landfill	5.4	0	0	0	1.46	1.05	0.78	0.87
	Solution										
008	Waste Lacquer/	Unused/Expired	Stabilization & Secure Landfill	3.0	0	0	0	1.46	1.05	0.78	0.87
	Thinner	Materials									

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HAZARDOUS WASTE REDUCTION PROGRAM

COMPANY NAME	EPA I.D. NUMBER
U.S. Chrome Corporation of New York	NYD990774200

TABLE 2

WASTE STREAM ID NUMBER	NAME OF WASTE	WASTE STREAM AFFECTED	REDUCTION PLANS/PROJECTS	ESTIMATED WASTE REDUCTION (TONS)	METHOD USED TO CALCULATE *ROI	*ROI (EST)	GOAL DATE	REMARKS
001	Chromic Acid Solution (D002, D007)		a) Improved Efficiency		N/A	N/A		
			b) Employee Training					
004	Process Wastewater & Filter Cake		a) Improved Efficiency		N/A	N/A		
			b) Employee Training		N/A	N/A		
005	Stripping Solution		Quality Control		N/A	N/A		
006	Chrome Debris	Tape, Gloves, Etc.	a) Employee Training		N/A	N/A		
			b) Improved Housekeeping & Addnl Controls					
002	Chromic Acid Tank Sludge		a) Improved Efficiency		N/A	N/A		
			b) Employee Training		N/A	N/A		

*ROI = RATE OF INVESTMENT AC = ANNUALIZED COST IRR = INCREASED RATE OF RETURN NPV = NET PRESENT VALUE PP = PAYBACK PERIOD PI = PROFITABILITY INDEX

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